



1998–99 CATS ASSESSMENT

Open-Response Item Scoring Worksheet

Grade 8—Practical Living

The **academic expectation** addressed by the open-response item “Water-Quality Regulations” is

2.33 Students demonstrate the skills to evaluate and use services and resources available in their community.

The **core content** assessed by this item includes

- Relationship of government standards (e.g., restaurant inspections, OSHA, water quality) to health and safety
- Kinds of services and resources available in the communities (e.g., public health department, voluntary health organizations, hospital)

Water-Quality Regulations

Regulations are used to ensure the quality of public water. Two examples of these regulations are listed below:

- The use of lead pipes is prohibited.
 - Standards must be set for allowable chemical levels in the water.
- a. Explain in detail **two** reasons why the government has established these types of regulations.
 - b. Identify **two** different sources you could use to get help or information if you thought your water supply was unsafe.
 - c. Explain the specific type(s) of information you could obtain from **each** source you identified in **part b**.



SCORING GUIDE

Grade 8 Practical Living

Score	Description
4	Student explains in detail 2 reasons why the government has established water-quality regulations. Student gives 2 sources of information/help and provides an explanation for each.
3	<p>Student explains in detail 1 reason why the government has established water-quality regulations. Student gives 2 sources of information/help and provides an explanation for each.</p> <p>OR</p> <p>Student explains 2 reasons why the government has established water-quality regulations, but the explanations are general (lack some development). Student gives 2 sources of information/help and provides an explanation for each.</p>
2	<p>Student fully responds to Part a or Part b, without answering the other part.</p> <p>OR</p> <p>Student explains 1 reason why the government has established water-quality regulations, but the explanation may be general or weak (lacks some development). Student gives 1 source of information/help with an explanation or 2 sources of information/help with minimal (weak) or no explanation.</p> <p>OR</p> <p>Student explains 2 reasons why the government has established water-quality regulations, but the explanations are general or weak (lack some development). Student gives 1 source of information/help with or without an explanation or 2 sources of information/help with minimal (weak) or no explanation.</p>
1	<p>Student gives a partial response to Part a or Part b, without answering the other part.</p> <p>OR</p> <p>Student lists or explains 1 reason why the government has established water-quality regulations and gives 1 source of information/help with minimal (weak) or no explanation.</p>
0	Response is totally incorrect or irrelevant.
Blank	No response.



SCORING GUIDE

Grade 8 Practical Living

Some examples of DETAILED reasons for water-quality regulations (i.e., specific with some development):

- To ensure that plenty of clean drinking water is available since water is essential for survival. (*Sample explanation:* Only a small percent of the water on the earth is drinkable. The rest of the water is too salty or frozen. If our supplies of fresh water become contaminated, they may be wasted and eventually people might not have enough water to drink. This would be bad, because people need water to survive.)
- To protect people by keeping water at an acceptable level of purity (e.g., no lead, not too many chemicals or bacteria) so that people can drink and bathe without becoming ill. (*Sample explanation:* These regulations were established to help keep us safe. They keep us from getting harmful things like lead and other chemicals into our bodies. This is important since too much lead or too many chemicals in our bodies can make us sick or even kill us.)
- To prevent lead poisoning/brain damage that can result when pieces of lead from pipes get into our water (*Sample explanation:* Lead pipes can leave filaments in the water which can lead to lead poisoning. Since you need clean, lead-free water to be healthy, you need regulations to be safe.)
- To prevent people from getting sick or dying as a result of too many chemicals or too few chemicals in the water. (*Sample explanation:* If there are too many chemicals in the water, people could get sick or even die because the water is too toxic. If not enough chemicals are put into the water during the treatment process, bacteria or other bad things in the water might not be killed. This could also make people sick.)
- To ensure that water does not include agricultural or manufacturing by-products that could make people sick if consumed. (*Sample explanation:* Farmers sometimes spray their plants with chemicals to get rid of pests. Also, animal feces carry bacteria. These things can get into the water supply. If there were no water-quality regulations requiring the water to be cleaned, people could get sick from drinking it.)

- To keep residents satisfied with their “living environment” so they won’t leave the area and hurt the community. (*Sample explanation:* Communities have an obligation to provide clean water to citizens. People may not want to live in an area that has contaminated water due to health risks. If people start to move away from the area because of the bad water, the local economy could be affected.)

Some examples of GENERAL reasons for water-quality regulations:

- To keep people from getting lead poisoning
- To keep people from getting sick from too many chemicals; to make sure there are not too many chemicals in our drinking water
- To prevent diseases from spreading
- To get rid of things in the water that could harm people’s bodies
- To keep the water from getting polluted and making people sick
- To keep people healthy and alive; to keep people from drinking unhealthy water

Some examples of WEAK/VAGUE reasons for water-quality regulations:

- To keep people safe
- To make sure water is safe/clean
- To make sure the water tastes good
- To make sure the water looks good
- So lead won’t get into the water

Some examples of UNACCEPTABLE reasons for water-quality regulations:

- To prevent lawsuits associated with water-related illnesses
- To prevent fish from getting sick after someone pours chemicals into lakes and streams (NOTE: This does not deal directly with the issue of quality public water.)
- To prevent soil from being damaged



SCORING GUIDE

Grade 8 Practical Living

Some examples of **ACCEPTABLE** sources of information/help:

- Local water company, resources board/department, water treatment plant
- EPA or other environmental groups
- Local college or university
- Health department
- Stores that sell water test kits/water treatment devices for home use
- Well digger/installer
- Government official (e.g., mayor, city manager, county judge executive, congressional representative, “the government”)
- Division of surface mining, mining agency
- Newspapers, TV stations (e.g., news programs), magazine/journals
- Plumber
- Local library
- Internet, computer

Some examples of **UNACCEPTABLE** sources of information/help (inappropriate or too vague/general):

- Sewage treatment plant
- Policeman
- Repairman

Examples of different levels of explanation for a source of information/help:

<u>Source</u>	<u>Acceptable Explanation</u>	<u>Minimal (Weak) Explanation</u>
Water company	<ul style="list-style-type: none">• could test your water to see if it is contaminated• could see if there is a problem with your water and then help you fix the problem	<ul style="list-style-type: none">• could fix it• could tell you about the water• could give you information about the water• would know if your water is fine



ANNOTATED STUDENT RESPONSE

Grade 8 Practical Living

Sample 4-Point Response of Student Work

Student Response

The government has set regulations on lead pipes and chemicals in our drinking water. We can't use lead pipes because there is a danger of lead poisoning. The water might break small amounts of pipe off and people would drink it and be poisoned. We have to keep an eye on the chemical level in water because too many chemicals will make us ill. If I thought my water was unsafe, I could go on-line or to my local water supplier. The information I would find on-line would probably be things to do to ensure the water is safe or signs of polluted water. The local water supplier would probably have me bring in a sample of my water to see if it is contaminated. They could tell me what I could do to make sure it stays at a good level of cleanliness.

Water conservation is a big issue nowadays. A lot of people think that water could come endlessly from the faucet. Well, it can't. Of all the water on this planet, only one percent is drinkable. We need to ensure that water is not wasted or contaminated. After all, a world without water is a world without anything.

← Student explains two reasons why the government has established water-quality regulations. The explanation related to lead pipes is relatively detailed. The explanation related to chemicals is general (lacks some development). An additional, more detailed reason is provided at the end of the student's response.

← Student gives two sources of information/help (i.e., computer/on-line and local water supplier) and explains types of information/help that could be obtained from each source.

← Student explains another reason why the government has established water-quality regulations. The explanation is relatively detailed.

Overall, the response demonstrates a solid understanding of the importance of water quality regulations and knowledge of where a person can go for information/help if they suspect their water is unsafe.



ANNOTATED STUDENT RESPONSE

Grade 8 Practical Living

Sample 4-Point Response of Student Work

Student Response

The safety of the water that we drink is very important to our health. From the result of this the government has issued regulations to ensure the quality of public water. One of these regulations states that the use of lead pipes is prohibited. This is extremely important to your health and sanitation. First of all, too much lead can kill someone or at least severely sicken them. Lead easily will chip and get into water. Washing in the water would not get you quite as clean, because you would be bathing in lead water. Another regulation the government issued states that standards must be set for allowable chemical levels in the water. With a lot of acidic chemicals in the water, bathtubs and sinks will not last long. Too many chemicals can also result in sickness.

If I suspected that our water was unsafe, I could do many things. First of all I could call the water plant and ask if they know of anything. This would allow me to know whether or not there is anything wrong. They may also tell me to boil the water. This may kill harmful bacteria that gets into the water system. I could also look in an encyclopedia under water treatment. This may give me a way to test the water myself. It would also give me certain precautions to take in order to make sure the water is clean. This is what I would do if I suspected my water was unsafe.

← Student explains two reasons why the government has established water-quality regulations, one reason related to lead pipes and one reason related to chemical levels in the water. Both explanations are relatively detailed.

← Student gives two sources of information/help (i.e., water plant and the water treatment section in an encyclopedia) and explains specific types of information/help that could be obtained from each source.

Overall, the response demonstrates a solid understanding of the importance of water quality regulations and knowledge of where a person can go for information/help if they suspect their water is unsafe.



ANNOTATED STUDENT RESPONSE

Grade 8 Practical Living

Sample 3-Point Response of Student Work

Student Response

A. Two reasons that the government established these regulations is because they don't want anybody to get sick from drinking water that has lead from pipes. They also have regulations for chemicals because if you get too much or too less of something then it could kill you.

B. Two sources would be to call the water company or do research in the library about contamination.

C. The specific types of information you could get would be the government regulations and if anything has ever happened in your town such as water contamination.

← Student explains two reasons why the government has established water-quality regulations. Both explanations are general (lack some development).

← Student gives two sources of information/help (i.e., water company and library).

← Student explains a type of information/help that could be obtained from each source (i.e., government regulations for the water company and information about local water contamination cases for the library).

Overall, the student demonstrates a satisfactory understanding of the importance of water quality regulations and knowledge of where a person can go for information/help if they suspect their water is unsafe. Response lacks the development needed to achieve a score of 4.



ANNOTATED STUDENT RESPONSE

Grade 8 Practical Living

Sample 2-Point Response of Student Work

Student Response

A. Two reasons why the government has established these types of regulations is because the lead pipes was getting lead in the water and because the chemical levels are not able to get very high because if there is a lot of chemicals in the water it can hurt people.

B. Water companion and books about your water.

C. The water companion such as water black board or resources about your water.

← Student explains two reasons why the government has established water-quality regulations. The explanation regarding lead pipes is weak (i.e., no clear connection to health risks associated with lead). The explanation regarding chemicals in the water is general (lacks some development).

← Student gives two sources of information/help.

← Student's attempted explanation of the information/help that can be obtained from the sources is too vague to receive credit.

Overall, the student demonstrates some understanding of the importance of water quality regulations and where a person can go for information/help if they suspect their water is unsafe. Important details are lacking in the explanation.

Sample 1-Point Response of Student Work

Student Response

The government has established laws prohibiting the use of lead pipes and setting standards for allowable chemical levels in the water because it would be good for us and help us more. I call the water company.

← Student provides one weak reason why the government has established water-quality regulations (i.e., because it would be good for us and help us) and gives one source of information/help (i.e., water company) with no explanation.

Overall, the student demonstrates minimal understanding of the importance of water quality regulations and where a person can go for information/help if they suspect their water is unsafe.



INSTRUCTIONAL STRATEGIES

Grade 8 Practical Living

The open-response item **“Water-Quality Regulations”** assesses students’ understanding of the importance of water-quality regulations and their knowledge of where a person can go for information/help if they suspect their water is unsafe. The instructional strategies below present ideas for helping students explore and master this knowledge.

Explain the overall importance of water-quality regulations and introduce several common water-quality regulations. Discuss in specific terms how each common water-quality regulation is designed to protect public health.

Explain different resources that people could use to obtain information about water quality issues.

Invite a speaker from the local water company to discuss water-quality regulations as they relate to the treatment of public water.

Invite a speaker from a well-digging company to discuss water-quality regulations as they relate to well digging.

Invite a speaker from the local health department to discuss the various health risks associated with different types of water contamination.

Organize a field trip to a water treatment plant.

Have students work individually, in pairs, in small groups, and/or as a class to complete any or all of the following activities:

- Research different water-quality regulations in the library and/or on the Internet. Prepare written and/or oral presentations and visual aids (e.g., posters) to teach classmates about water-quality regulations and their importance.
- Research cases of water contamination in Kentucky and around the country. Prepare written and/or oral presentations and visual aids to teach classmates about the nature of the water contamination cases and their effects on public health.
- Test different water samples (e.g., tap water, water from a nearby lake or stream) using an over-the-counter water test kit. Discuss the results of the tests and the potential impact that poor water, if consumed over time, could have on public health.
- Collect information on water quality issues from different organizations in the community (e.g., health department, water company). Create a display in the school library of the information collected.
- Watch and discuss the movie “A Civil Action.” (Or, read and discuss the book.)
- Organize and implement a class project to help clean up a local stream, river, or lake.